

**EPA Superfund
Record of Decision:**

**RHINEHART TIRE FIRE DUMP
EPA ID: VAD980831796
OU 02
FREDERICK COUNTY, VA
09/29/1992**

U.S. ENVIRONMENTAL PROTECTION AGENCY

REGION III

SUPERFUND PROGRAM

SEPTEMBER 1992

RECORD OF DECISION
OPERABLE UNIT 2 (OU 2)

RHINEHART TIRE FIRE SITE
WINCHESTER, VIRGINIA

RECORD OF DECISION

RHINEHART TIRE FIRE SITE

I. DECLARATION

A. SITE NAME AND LOCATION

Rhinehart Tire Fire Site
Winchester, Virginia
Operable Unit Two

B. STATEMENT OF BASIS AND PURPOSE

This decision document presents the selected remedial action for the Rhinehart Tire Fire Site (the Site), in Winchester, Virginia, which was chosen in accordance with the Comprehensive Environmental Response, Compensation and Liability Act of 1980, (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), and, to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). This decision is based on the administrative record file for this Site.

The Commonwealth of Virginia concurs with the selected remedy.

C. ASSESSMENT OF THE SITE

Pursuant to duly delegated authority, I hereby determine, pursuant to Section 106 of CERCLA, 42 U.S.C. S 9606, that actual or threatened releases of hazardous substances from this Site, as discussed under Summary of Site Risks in this document, if not addressed by implementing the response action selected in this Record of Decision (ROD), may present an imminent and substantial endangerment to public health, welfare, or the environment.

D. DESCRIPTION OF THE SELECTED REMEDY

This early remedial action for the second operable unit (OU 2) of the Site addresses an onsite containment basin, "Dutchman's Pond". Operable Unit 1 (OU 1) addressed the control of contaminant migration offsite via surface water runoff. A subsequent operable unit will address the remainder of the Site.

The major components of this selected remedy for OU 2 include:

- . Oil/water separation of the surface water presently in Dutchman's Pond via the existing onsite oil/water separator.
- . Surface water from the oil/water separator will be directed to Rhinehart's Pond for treatment in the existing onsite wastewater treatment package plant using chemical precipitation and solid separation.
- . Treated surface water will be discharged to Massey Run.
- . Sediments from Dutchman's Pond will be sampled, removed and mixed with a solid reagent. Moisture reduced sediments will be tested to

determine if they are hazardous according to the Resource Conservation and Recovery Act (RCRA) and disposed of appropriately.

- . Removal and disposal of the synthetic liner currently lining Dutchman's Pond.
- . Testing of the soils surrounding and underneath Dutchman's Pond. Soils containing levels of zinc greater than 50 parts per million (ppm) will be excavated, transported, and disposed of at an approved landfill (RCRA Subtitle C or D).
- . The area of Dutchman's Pond, including any surrounding soils that may be excavated, will be backfilled with clean soil and appropriate soil erosion controls will be implemented.

E. STATUTORY DETERMINATIONS

The selected remedy is protective of human health and the environment, complies with Federal and State requirements that are legally applicable or relevant and appropriate (ARAR) to the remedial action, and is cost effective. This remedy utilizes permanent solutions and alternative treatment (or resource recovery technologies), to the maximum extent practicable and satisfies the statutory preference for remedies that employ treatment that reduces toxicity, mobility, or volume as a principal element. Because this remedy will not result in hazardous substances remaining onsite above health-based levels, a five year review pursuant to Section 121(c) of CERCLA, 42 U.S.C. S 9621(c) is not applicable to this action.

II. DECISION SUMMARY

A. SITE NAME, LOCATION, AND DESCRIPTION

The Rhinehart Tire Fire Site is located in a sparsely populated rural area of western Frederick County, Virginia. The Site is approximately 65 miles West-Northwest of Washington, D.C. and approximately 6 miles east of the Town of Winchester (Figure 1).

The Rhinehart Tire Fire Site is located within a 22 acre drainage area (Figure 2). Surface water runoff within the Site flows into the northeast-southwest flowing tributary (Figure 3) which discharges to Hogue Creek 4000 feet downstream. Hogue Creek, which is a tributary of the Potomac River System, has been designated as a put-and-take trout stream (Class V) by the Virginia State Water Control Board.

The Site is located on private property in the Western Portion of the Valley and Ridge Physiographic Province, in the Appalachian Highlands. The area topography encompassing the Rhinehart Site is dominated by a series of alternative northeast-trending ridges and valleys. The area of concern, located on the western slope of Hunting Ridge, is underlain by five to ten feet of compact clayey-silt. The silt is underlain by ten to twenty-five feet of weathered sandstone and interbedded with gray shale. Unweathered bedrock predominates at depths between twenty and thirty-five feet. Bedrock is noted to be highly fractured. Groundwater flow in the overburden and weathered bedrock is toward Massey Run. Although not well understood, deeper regional groundwater flow is believed to follow the bedrock fractures.

B. SITE HISTORY AND ENFORCEMENT ACTIVITIES

Between 1972 and 1983, the Site owner conducted a tire disposal operation which consisted of transporting discarded tires from various locations and storing them in the natural drainage swale of a wooded slope behind his home. By October, 1983, an estimated five to seven million tires had been accumulated. On October 31, 1983, a fire broke out in the 5-acre tire storage area and burned until July 4, 1984. Due to the magnitude of the fire, assistance from the Environmental Protection Agency (EPA) was requested by State officials. The intense heat generated by the fire caused a pyrolytic reaction with the tires which produced a free flowing oily-tar. Chemically, the oily-tar consisted of: benzene, ethylbenzene, toluene, anthracene, naphthalene, pyrene, cadmium, chromium, nickel, and zinc. Shortly after the fire started, the free flowing tar produced from the melting and pyrolysis of the tires began to seep out of the toe of the tire pile and into Massey Run, a tributary to Hogue Creek. An undetermined quantity of tar flowed into Hogue Creek, which is a tributary to the Potomac River System. Due to the imminent hazard posed by the free-flowing oily-tar, control of the material was a priority. High rates of tar and water seepage threatened to exceed the temporary containment basin constructed by State and local officials during the initial period of emergency response. In an effort to control the migrating/flowing waste stream, oil was pumped to "Rhinehart's Pond." The Site owner created Rhinehart's Pond by damming Massey Run prior to the

fire to construct the cooling water pond. In addition, EPA's Emergency Response Team (ERT) constructed a secondary lined containment basin downslope of the fire area by mid November, 1983. This containment pond, known as "Dutchman's Pond", was built for containment of water generated by the early fire fighting efforts and oil products from the burning tires. Currently, Rhinehart's Pond and Dutchman's Pond remain onsite.

In order to further minimize the threat to human health and the environment in a cost-effective manner, reuse/recycling of the tar waste stream was evaluated by EPA during the emergency response. The waste stream generated exhibited properties similar to heating oil allowing for 800,000 gallons of the waste stream to be collected, removed from the Site, and recycled into fuel oils.

Concurrent with the emergency response activities at the Site, EPA entered into an administrative consent order with the Site owner to construct dikes and ditches for drainage control and collection and pumping operations to minimize the volume of waste escaping from the Site. Since the fire, the Site owner has conducted trenching and grading operations which affect shallow ground water flow and distribution of the ash residue.

Subsequent to the emergency response, in 1984, EPA ERT performed a ground water study. The ground water study was undertaken to determine only if ground water contamination existed, not to define the full extent. The study concluded that some degradation of ground water had occurred, but contaminants were likely to remain within the Massey Run drainage basin, eventually discharging to Massey Run, with little effect on local ground water consumers.

Following the emergency response activities at the Site, EPA conducted a Remedial Investigation (RI) to characterize and define the extent of possible contamination at the Site. The first phase of the RI, completed in March of 1987, included site mapping, surface water and sediment sampling, soil sampling, and a ground water survey. The second phase of the RI, completed in August of 1988, included the sampling and analysis of surface and subsurface soil, ground water, surface water and sediments, and biological studies of aquatic life. Following these two phases of investigation, a feasibility study (FS) was developed in November of 1988.

The RI identified aquatic toxicity as the principal environmental concern at the Site and concluded that contaminated runoff from the Site was the main contributor to the problem. Based on these studies, a remedy was selected in the June 30, 1988, Record of Decision (ROD). The goal of the remedy was to control the contaminants leaving the Site in the surface water runoff. Following the ROD, a detailed set of plans and specifications for implementation of the OU 1 remedial action was designed for EPA by the U.S. Army Corps of Engineers (USACE).

Upon completion of the OU 1 design in July 1989, bids for construction of the remedial action were advertised on August 10, 1989. Although the bid closing date was extended through September, no bids were received on the project. The USACE then initiated negotiations with a pre-placed construction contractor. EPA awarded only the wastewater treatment portion of the project to the pre-placed contractor in October 1989. The wastewater treatment plant was installed onsite on June 11, 1990. The remainder of the project was re-evaluated and revised for cost-effectiveness. The revised design was advertised for bid on May 22, 1990. The construction contract was not awarded until September 13, 1990, due to changes in Site conditions made by the property owner. On July 26, 1989, the Site owners entered into an Administrative Consent Order with EPA. The main purpose of the Order, among other things, was to provide EPA access to the Site to conduct the necessary response actions. Construction began March 6, 1991, and was completed on April 30, 1992.

Operable Unit 1 has been implemented and is currently functioning onsite. The major features of the constructed remedy include: soil erosion controls which have been installed in the fire area, the containment capacity of Rhinehart's Pond has been increased by raising the existing dam on the Pond by 13 feet, shallow oily-ground water seeps are collected and drained to the oil-water separator, surface water runoff from the fire area is collected and drained to Rhinehart's Pond through an extensive subsurface drainage system, the increased capacity of Rhinehart's Pond provides gravity settling of solids, and surface water in Rhinehart's Pond is pumped through a wastewater treatment plant and subsequently discharged to Massey Run. The wastewater treatment plant is now operating on a periodic basis. The sludge generated from the treatment process is returned to the Pond and will be addressed in the final remedy for the Site.

C. HIGHLIGHTS OF COMMUNITY PARTICIPATION

EPA has met its public participation requirements under CERCLA Sections 113(k)(2)(B), 117(a), and 121(f)(1)(G), 42 U.S.C. S 9613(k)(2)(B), 9617(a), and 9621(f)(1)(G). The Proposed Plan and administrative record file for this operable unit of the Rhinehart Tire Fire Site were released to the public on August 15,

1992. These documents were made available to the public in both the administrative record file and the information repository maintained at:

The Handley Library
100 West Picadilly Street
Winchester, VA 22601
(703) 662-9041

Office of the County Supervisors
9 Court Square
Winchester, VA 22601
(703) 665-5666

EPA, Region III
841 Chestnut Building
Philadelphia, PA 19107

The notice of availability of these two documents was published in the Northern Virginia Daily and the Winchester Star on August 14, 1992. A response to the comments received during the public comment period is included in the Responsiveness Summary which is part of this ROD. This decision document presents the selected remedial action for the second Operable Unit (OU 2) at Rhinehart Tire Fire Site.

D. SCOPE AND ROLE OF OPERABLE UNITS

As with many Superfund sites, the problems at the Rhinehart Tire Fire Site are complex. As a result, the EPA organized the work into three OUs. They are as follows: OU 1 which addressed the control of contaminant migration offsite via surface water runoff (a ROD for this first OU was signed on June 30, 1988 and construction of the OU 1 remedial action was completed on April 30, 1992); OU 2 - Dutchman's Pond (the subject of this ROD); and OU 3 which will address the remainder of site contamination. This early action for OU 2 is being addressed before the completion of the final phase of the RI/FS because it has been determined that Dutchman's Pond poses an environmental risk at the Site. After the final phase of the fullsite RI/FS is completed, EPA will select and implement a final remedy for the entire Site. To the extent possible, this early action will be consistent with any future response actions at the Site.

The Preamble to the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) explains that there is a bias for action and that the principle of streamlining may be appropriately considered throughout the life of the project. The Preamble specifically states that "EPA expects to take early action at sites where appropriate, and to remediate sites in phases using operable units as early action to eliminate, reduce or control the hazards posed by a site or to expedite the completion of total site cleanup. In deciding whether to initiate early action, EPA must balance the desire to definitively characterize site risks and analyze alternative remedial approaches for addressing those threats in great detail with the desire to implement protective measures quickly." 55 Federal Register at 8704 (March 8, 1990); See: 40 C.F.R. S 300.430 (a)(1)(ii)(A). The decision to select the remedy for OU 2 was made utilizing the bias for action set forth in the NCP as the guideline.

E. SUMMARY OF SITE CHARACTERISTICS

The principal environmental concern is toxicity as demonstrated by acute and chronic bioassay tests on Ceriodaphnia and the Fathead Minnow in surface water samples taken from locations downgradient of the Site. The toxicity exhibited was attributed to the elevated levels of zinc identified in surface water samples and onsite soils. Therefore, runoff from the Site into surface water may be elevating zinc concentrations in surface water and sediments. In addition, offsite sediment samples contained high metal concentrations and several organic compounds that are known to adversely impact aquatic life.

A portion of the second phase of the RI included sampling of surface waters and sediments. A total of sixteen surface water and sixteen sediment samples were collected from Dutchman's Pond, Rhinehart's Pond and streams that receive drainage from the Site (Figure 3). In addition, toxicity tests were performed on samples collected from these surface waters. Two of each type of sample were collected from Dutchman's Pond.

Sediment samples from Dutchman's Pond, contained significantly higher concentrations of zinc than did the background samples. Zinc was also detected in downstream samples. The concentrations decreased with increased distance from the Site. Zinc was the only metal found in significantly higher concentration in all samples. The table below compares zinc levels in background sediments with the highest level of zinc found

in sediments of Dutchman's Pond and the highest level of zinc found in sediments of the offsite receiving stream.

As shown on the following table, filtered surface water samples from Dutchman's Pond and the offsite downgradient receiving stream contained several metals at concentrations which exceed state and federal criteria for aquatic life.

Surface water toxicity tests were used to assess potential ecological effects at the Rhinehart Tire Fire Site. Selected organisms were exposed to surface waters to determine whether the surface water exhibited adverse affects. Results of these toxicity tests, documented in the Aquatic Toxicity Report dated January 29, 1988, demonstrate acute and chronic toxicity in Dutchman's Pond and the offsite receiving streams. The data, shown on the following table, suggests that acute and chronic toxicity has contributed to the elimination of some resident species in the stream extending from the Site downstream to station SW012 (Figure 3).

In August of 1990, additional samples were taken from Dutchman's Pond to verify surface water and sediment contamination. A detailed schematic of Dutchman's Pond has been included as Figure 4. In addition, soil samples from around the pond were taken to establish contaminant concentration levels. Although a complete data set was not obtained, zinc analyses performed revealed concentrations from 20 ppm to 1300 ppm in surface water; 940 ppm to 1400 ppm in sediments. Zinc levels in soils ranged from 50 ppm to 300 ppm in surface soils samples and 48 ppm to 58 ppm in samples collected 18 inches below the surface.

Background soils samples collected during the Phase I RI in 1986 contained zinc levels from 36 ppm to 50 ppm. Zinc has been detected in surface soils surrounding the Dutchman's Pond at concentrations up to 300 ppm, i.e., six times greater than the estimated background conditions. During high flow conditions, surface soils containing zinc can erode and transport elevated levels of zinc offsite.

The toxicity characteristic leaching procedure (TCLP) was run on surface water, sediment, and soil samples to determine if any of the media was considered a characteristic hazardous waste under the Resource Conservation and Recovery Act (RCRA). All results were negative with the exception of one sediment sample which contained a benzene level of 0.86 mg/l; however, these data results are of questionable quality. The level of benzene identified as hazardous according to the TCLP is 0.5 mg/l.

Physical parameters were also taken during the sampling event. A noticeable gradient of dissolved oxygen, Ph, and conductivity (with depth) was present near the center of the Pond. Sampling and analysis show that pH grades from 8.6 units to 6.5 units from top to bottom. Dissolved oxygen follows the same gradient with values of 7.5 mg/l to 0.16 mg/l from top to bottom. These parameters seem to suggest stratification in Dutchman's Pond as a result of a chemical gradient located at the bottom of the Pond.

During the remedial investigation, Massey Run, the unnamed tributary, and Hogue Creek were observed to be small shallow streams characterized by slow-moving ripples and occasional deep pools. This type of stream enables metals to settle out of the water column and accumulate in sediments. However, the steep topography of the drainage basins in these streams suggest that during high flow conditions large amounts of sediments are transported and subsequently redeposited further downstream presenting the risk of contaminated surface water and sediments migrating to Hogue Creek, a put-and-take trout stream.

Sampling of Dutchman's Pond shows zinc contamination of surface water and sediments. Normally, the pond would enable some of the contaminated sediments which enter it to settle out of the water column; however, only 6 inches of freeboard exist in Dutchman's Pond. Currently, the pond presents an imminent threat of release to the environment since contaminated surface water and sediments are readily available for offsite transport.

F. SUMMARY OF SITE RISKS

Zinc is found in the earth's crust in the range of 10 to 300 ppm, with an average of 50 ppm. Zinc's mobility is strongly affected by Ph: in alkaline soils, zinc is immobile. It is an essential trace element for mammals and many other organisms, but at high levels, it impacts liver metabolism. Zinc bioaccumulates well in freshwater species. Zinc-enriched sediments impact embryo development in fish. Adult fish suffer gill impairment from elevated levels of zinc. The oxygen transfer mechanism is adversely affected. Liver tissue becomes necrotic (localized death of living tissue). Tolerance to zinc involves protein tie-up in the liver. Ceriodaphnia, a commonly used bioassay organism, is the most sensitive aquatic invertebrate, showing chronic toxicity at 47 ug/l (ppb) in water. Zinc exposure is known to cause acute and chronic effects in aquatic life. Low levels of zinc are known to damage or kill plants.

Acute toxicity causes death or extreme physiological disorders to organisms immediately or shortly following exposure to the contaminant. Chronic toxicity involves long-term effects of small doses of a contaminant and their cumulative effects over time. These effects may lead to death of the organism or disruption of such vital functions as reproduction. Aquatic bioassay analyses performed by U.S. EPA Region III Wheeling Operations Section Biology Unit on surface water samples from Dutchman's Pond and the receiving stream produced acute and chronic toxicity in Ceriodaphnia and fathead minnows. Additionally, the Ph and hardness of surface water collected from Dutchman's Pond in August of 1990 conservatively indicate that zinc is bioavailable.

The exposure route of concern is the continued release of surface water, sediments, and surrounding soils from Dutchman's Pond to aquatic life. The contaminant most likely to be of ecological concern is zinc.

The contaminated surface water, sediments, and soils surrounding Dutchman's Pond allow for significant exposure pathways to aquatic organisms and the environment. Qualitative risk information demonstrates that action is necessary to control offsite migration of contaminants. The threat to the environment is intensified further due to the lack of freeboard in the Pond. Without further action, the Site will continue to degrade and pose an unacceptable risk to aquatic life and the environment.

Actual or threatened releases of hazardous substances from this Site, if not addressed by implementing the response action selected in this ROD, may present an imminent and substantial endangerment to the environment.

G. DESCRIPTION OF ALTERNATIVES

The Superfund process requires that the alternative chosen to clean up a hazardous waste site meet two threshold criteria: protection of human health and the environment, and meet applicable or relevant and appropriate requirements (ARARs). EPA's primary balancing criteria are: long term effectiveness and permanence, short term effectiveness, reduction of volume, toxicity, or mobility of the contaminants through treatment, cost effectiveness and implementability. EPA's modifying criteria are State and community acceptance.

Section 121(d) of CERCLA, 42 U.S.C. S 9621(d) requires that remedial actions at CERCLA sites at least attain legally applicable or relevant and appropriate federal and State standards, requirements, criteria, and limitations which are collectively referred to as ARARs, unless such ARARs are waived under CERCLA Section 121(d)(4), 42 U.S.C. S 9621(d)(4). Applicable requirements are those substantive environmental protection requirements, criteria, or limitations promulgated under federal or State law that specifically address hazardous substances found at the site, the remedial action to be implemented at the site, or other circumstances present at the site. Relevant and appropriate requirements are those substantive environmental protection requirements, criteria, or limitations promulgated under federal or State law which, while not applicable to the hazardous materials found at the site, the remedial action itself, the site location or other circumstances at the site, nevertheless address problems or situations sufficiently similar to those encountered at the site that their use is well-suited to the site.

Alternative No. 1: No Action

The NCP requires that the "no action" alternative be evaluated at every site to establish a baseline for comparison. Under this alternative, EPA would not implement any additional measures to protect human health or the environment at this time. Under this alternative Dutchman's Pond would remain onsite. The zinc-containing surface water and sediments would be available for transport offsite until a final remedy for the Site is selected and implemented. It is anticipated that this final cleanup would take approximately two years after the final phase of the RI/FS is completed, a Record of Decision is prepared and signed, and a remedial design is finalized. There are no estimated costs or implementation time frames associated with this alternative.

Alternative No. 2: Closure of Dutchman's Pond

The intent of this alternative is to eliminate the immediate threat of release to Massey Run, the neighboring receiving stream. This alternative would eliminate the present and future ecological risks associated with the contaminated surface water sediments, and soils associated with Dutchman's Pond. Under this alternative, the following actions would occur:

- . Oil/water separation and wastewater treatment of approximately 200,000 gallons of surface water in Dutchman's Pond utilizing the existing onsite oil/water separator and the onsite wastewater treatment package

plant. Treated surface water meeting the existing Water Quality Effluent Standards set by the Virginia Water Control Board (VWCB) would be discharged to Massey Run. These criteria are identified in Appendix A of this document. The sludge generated from the wastewater treatment process will be returned to Rhinehart's Pond and will be addressed in the final remedy for the Site.

- . Sampling, identification, excavation, and moisture reduction of sediments contained above the liner in Dutchman's Pond.
- . Moisture reduced sediments will be tested to determine if they are hazardous according to Resource Conservation and Recovery Act (RCRA). These sediments will be transported and disposed of at an approved RCRA Subtitle D or Subtitle C landfill in compliance with RCRA Land Disposal Restrictions, 40 C.F.R. Part 268, as appropriate.
- . Transportation and disposal of the synthetic liner in an approved RCRA Subtitle C or Subtitle D landfill as appropriate. If it is determined that the liner must be disposed of in a RCRA Subtitle C landfill, the RCRA Land Disposal Restrictions will be complied with as necessary.
- . Testing of soils surrounding and underneath the lined pond for contamination. Soils containing levels of zinc greater than 50 ppm would be excavated, transported, and disposed of at an approved RCRA Subtitle D or Subtitle C landfill in accordance with RCRA Land Disposal Restrictions as necessary. In either case, removal of the liner and soils will constitute a clean closure. An estimated 1,125 cubic yards of soil will be removed for disposal.
- . The area of Dutchman's Pond including any surrounding soils that may be excavated will be backfilled with clean soil and appropriate soil erosion controls will be implemented.

The present-worth cost of this alternative is estimated to be \$1,300,000. The capital costs are estimated at \$1,276,000. Operation and maintenance (O&M) costs are estimated at \$12,000 per year to maintain the soil cap. O&M will be required for two years. The estimated implementation time is 18 months.

H. SUMMARY OF THE COMPARATIVE ANALYSIS

The NCP requires that remedial alternatives be evaluated using the following nine criteria: Threshold Criteria (overall protection of human health and the environment; compliance with ARARs); Primary Balancing Criteria (long term effectiveness and permanence; reduction of toxicity, mobility or volume through treatment; short-term effectiveness; implementability; cost); and the Modifying Criteria (State acceptance and community acceptance).

Overall Protection of Human Health and the Environment

Alternative 2 is protective of human health and the environment. This alternative would eliminate the migration of contaminated surface water and sediments offsite. The surrounding pond soils would be remediated to acceptable environmental cleanup levels as set forth in Section G. Description of Alternatives, Alternative No. 2: Closure of Dutchman's Pond, bullet 5.

The no action alternative would not reduce any risks at this time, and, therefore would not be protective of human health and the environment as required by the NCP. Therefore, it is eliminated from further consideration.

Compliance with ARARs

Alternative 2, the selected remedy for OU 2, will comply with all applicable or relevant and appropriate chemical-, location-, and action-specific ARARs pertinent to this action as summarized below:

- . Discharge of treated wastewater to Massey Run will comply with the provisions of Virginia's Pollution Discharge Elimination Regulations

(VR 680-14-01) and the Virginia Water Quality Standards promulgated August 1989 (VR 680-21-01). Discharge limits consistent with these regulations were established for the Site in August 1989 and are identified in Appendix A to this document. A test of treated effluent on aquatic organisms will be required prior to any discharge associated with OU2.

- . The Virginia Erosion and Sediment Control Law, Code of Virginia Section 10.1-560 et seq., and the Virginia Erosion and Sediment Control Regulations (VR 625-02-00) contain standards that are applicable to the area of Dutchman's Pond where soils may be excavated and backfilled.
- . The Virginia Air Pollution Control Law, Code of Virginia Section 10.1-1300 et seq.; Virginia Department of Air Pollution Control Regulations for the Control and Abatement of Air Pollution (VR 120-04-010101) as codified in 40 C.F.R. S 52.2420 are applicable to the remedial alternative. Under this regulation, fugitive dust emissions generated by earthmoving activities must be controlled to prevent particulate matter from becoming airborne. These regulations require that no source discharge emissions of greater than 20% capacity except during specific periods.
- . To the extent that hazardous waste is identified on site 40 C.F.R. Part 262, 40 C.F.R. Part 23, and 40 C.F.R. Part 24 are applicable to the disposal of that hazardous waste.[1] <Footnote>1 The Federal Regulations as cited above are applicable to the extent that requirements of the Hazardous and Solid Waste Amendments have not been promulgated as part of the Virginia Regulations.</footnote>
- @ The Virginia Waste Management Act, Code of Virginia Sections 10.1-1400 et seq., Virginia Hazardous Waste Management Regulations (VSWMR) (VR 672-10-1), and Virginia Solid Waste Management Regulations (VSWMR) (VR 672-20-10) are applicable to the treatment and disposal of waste from the Site if these wastes are determined to be hazardous.
- . 40 C.F.R. S 264.228 and VHWMR Section 10.10 governing the closure of hazardous waste surface impoundments is relevant and appropriate to the closure of Dutchman's Pond, if sampling determines that the pond wastes are a RCRA characteristic waste.
- . Part VIII of the VSWMR is applicable to the deposit of any soil, debris, sludge or any other solid waste from the Site. It is anticipated that the wastes generated from the pond closure will be characterized as a Special Waste under the Virginia regulations. Specific approval from the Virginia Department of Waste Management will be required before any special waste can be accepted by an offsite solid waste disposal facility within the Commonwealth of Virginia.
- . VHWMR Section 3 is applicable to the identification and classification of waste streams associated with Dutchman's Pond.
- . The RCRA Land Disposal Restrictions Regulations (LDR's), 40 C.F.R. Part 268, are applicable to the offsite disposal of soils and mixed sediments if through sampling EPA determines the waste is hazardous under RCRA, that "placement" of wastes has occurred, and the RCRA waste is restricted from land disposal under RCRA as defined in 40 C.F.R. S 268.1. The remedial alternative calls for offsite disposal of a waste in a landfill. This action constitutes placement. The sampling and analysis to be performed on sediments and soils to be disposed offsite will allow EPA to determine if the wastes are a RCRA hazardous waste and a RCRA restricted waste.

The LDRs place specific restrictions (e.g., specific treatment of wastes to specific concentration levels) on RCRA hazardous wastes prior to their placement in land disposal units. The Agency recognized that meeting such treatment standards would not always be possible or appropriate. CERCLA response actions involving the placement of soil and debris contaminated with RCRA restricted wastes may utilize a Treatability Variance (40 C.F.R. S 268.44) to comply with the LDRs because these waste differ significantly from the waste used to set the Land Disposal treatment standard. Under the Treatability Variance, alternate treatment levels based on data from actual treatment of soil, or best management practices for debris become the "treatment standard" that will be met. Should EPA determine that the wastes are hazardous under RCRA and that they are restricted from land disposal under RCRA, EPA will consider the appropriateness of seeking a Treatability Variance.

- . The Department of Transportation regulations outlined in 49 C.F.R. Part 107, Sections 171.1-171.558 and the Virginia HWMR Part VII will be applicable to the offsite transport of waste streams classified as hazardous.
- . The OSHA regulations outlined in 29 C.F.R. S 1910 and 1926 are applicable to ensure worker and visitor health and safety during onsite remedial activities.

Long-Term Effectiveness and Permanence

This evaluation focuses on the results of a remedial action in terms of the risk remaining and the ability of the remedy to maintain reliable protection of human health and the environment at the site after response objectives have been met.

Long-term effectiveness and permanence is achieved in its highest degree with Alternative 2. For this alternative contaminated surface water is treated to established levels for protection of aquatic life. Contaminated soils and sediments would be removed leaving no residual environmental risk from the pond.

Reduction of Toxicity, Mobility, or Volume through Treatment

Alternative 2 will provide an irreversible treatment process (chemical precipitation and solids separation) that significantly reduces the aquatic toxicity of the contaminated surface water. The removal of contaminated soil and sediment will abate the ecological toxicity and mobility of contaminants.

Short-Term Effectiveness

This criteria focuses on the human health and environmental impacts which may occur during the implementation of the remedial alternative.

Alternative 2 would require proper adherence to safety measures to protect onsite workers during wastewater treatment and excavation activities. Risks posed to the local community through the offsite transportation of wastes are minimal; however, dust control measures will be implemented. The actual site work through the excavation of surrounding surface and subsurface pond soils should take approximately 6 months. Additional time will be required to design and construct the appropriate soil backfill and soil erosion controls.

Implementability

The implementability criterion relates to the technical and administrative feasibility of an alternative. The excavation, removal, and transportation of soils and sediments to an appropriate disposal facility is a standard site cleanup and construction procedure and should not present any unusual technical or administrative problems. The oil/water separator and wastewater treatment process to be utilized are well-demonstrated and readily implementable.

Cost

This criterion examines the estimated costs for implementing the remedial alternatives. The estimated present worth cost is \$1,300,000 which is comprised of \$1,276,000 in capital costs and \$24,000 in operation and maintenance (O&M) costs. O&M costs are anticipated to maintain the soil backfill on the area that will be excavated for a period of two years. The cost effectiveness of this remedy is enhanced by the use of the existing onsite wastewater treatment plant and oil/water separator.

State Acceptance

The Virginia Department of Waste Management (VDWM) has concurred with Alternative 2 as the selected remedy for OU 2.

Community Acceptance

A public comment period for the Proposed Plan was held from August 15, 1992 to September 14, 1992. Because community interest in the Rhinehart Tire Fire Site has been limited in the past, EPA offered to conduct a public meeting if requested. Although EPA received no requests for a public meeting, several written comments were received. The Responsiveness Summary provides a thorough review of the public comments received on the Proposed Plan, and the EPA's responses to those comments.

I. THE SELECTED REMEDY/PERFORMANCE STANDARDS

Based upon consideration of the requirements of CERCLA, the detailed analysis of the alternatives using the nine criteria, and public comments, EPA has determined and the State of Virginia has concurred that Alternative 2 (Closure of Dutchman's Pond) is the most appropriate remedy for this portion of the Rhinehart Tire Fire Site. As described in the Description of Alternatives, the selected remedy consists of:

- . Oil/water separation and wastewater treatment of surface water in Dutchman's Pond. Dutchman's Pond is defined in Figures 3 and 4. Approximately 200,000 gallons of surface water from Dutchman's Pond will be pumped through the existing onsite oil/water separator. Surface water will then be directed to the existing onsite wastewater treatment package plant at Rhinehart's Pond. The wastewater treatment process consists of chemical precipitation and solid separation. Treated surface water would be discharged to Massey Run meeting the existing Water Quality Effluent Standards set by the Virginia Water Control Board (VWCB) under the "Virginia Pollutant Discharge Elimination System (VPDES)." The performance standard for the surface water treatment process is the discharge criteria detailed in Appendix A of this document. The sludge generated from the wastewater treatment process will be returned to Rhinehart's Pond and will be addressed in the final remedy for the Site.
- . Sediments from Dutchman's Pond will be pumped from the pond, mixed with a solid reagent such as cement kiln dust to reduce moisture to meet the receiving facility's standards, and sampled using the Toxicity Characteristic Leaching Procedure (TCLP) to determine if they are hazardous according to the Resource Conservation and Recovery Act (RCRA) toxicity characteristic. If the mixed sediments are not hazardous, they will be transported and disposed at an approved RCRA Subtitle D landfill. If the mixed sediments are considered hazardous, they will be transported and disposed of at an approved RCRA Subtitle C landfill in compliance with Land Disposal Restrictions as appropriate.
- . The synthetic liner of Dutchman's Pond will be transported and disposed of in an approved RCRA Subtitle C or Subtitle D landfill as appropriate. If it is determined that the liner must be disposed of in a Subtitle C landfill, the RCRA Land Disposal Restrictions will be complied with as necessary.
- . Soils surrounding and underneath the lined pond would be tested for the presence of contamination using EPA's Target Compound List and Target Analyte List (TCL/TAL). Soils containing levels of zinc greater than 50 ppm would be excavated, transported, and disposed of at an approved landfill. If testing identifies additional contaminants of concern, EPA will determine the appropriate cleanup level. Previous test results indicate that soils do contain zinc levels in excess of 50 ppm; however, testing also indicates that these soils are not a RCRA hazardous waste. If testing verifies that soils are not a RCRA hazardous waste, soils will be disposed of in an approved RCRA Subtitle D landfill. If soils are found to be a RCRA

hazardous waste, they will be disposed in an approved RCRA Subtitle C landfill in accordance with RCRA Land Disposal Restrictions as necessary. In either case, removal of the liner and soils will constitute a clean closure. It is anticipated that 1,125 cubic yards of soil will be removed for offsite disposal.

The area of Dutchman's Pond including any surrounding soils that may be excavated will be backfilled with clean soil and appropriate soil erosion controls will be implemented. Soil erosion controls may consist of diverting any ground water seeps and hydroseeding.

- . If it is determined that the Land Disposal Restrictions apply to any of the cases mentioned above, it may be necessary to invoke a Treatability Variance to comply with the Land Disposal Restrictions.

J. STATUTORY DETERMINATIONS

Under CERCLA Section 121, 42 U.S.C. 9621 EPA must select remedies that are protective of human health and the environment, comply with applicable or relevant and appropriate requirements (unless a statutory waiver is justified), are cost effective, and utilize permanent solutions and alternative treatment technologies, or resource recovery technologies, to the maximum extent practicable. In addition, CERCLA includes a preference for remedies that employ treatment that permanently and significantly reduce the volume, toxicity, or mobility of hazardous wastes as a principal element. The following sections discuss how the selected remedy meets these statutory requirements.

Protection of Human Health and the Environment

The selected remedy is protective of human health and the environment. By removing all contamination from Dutchman's Pond, contaminants in the soils and sediments will no longer migrate from the area to the surface water, thus impacting the aquatic organisms and the environment. In addition, the surface water from Dutchman's Pond will be treated to meet the existing Virginia Water Quality Effluent Standards and discharged to Massey Run. No unacceptable short-term risks or cross-media impacts will be caused by implementation of the remedy.

Compliance with ARARs

The selected remedy will comply with all ARARs as presented in the summary of comparative analysis set forth in Section H above.

Cost Effectiveness

Since the selected remedy eliminates the risks to the environment at an estimated present worth cost of \$1,300,000, the selected remedy provides overall effectiveness proportional to its costs.

Utilization of Permanent Solutions and Alternative Treatment Technologies or Resource Recovery Technologies to the Maximum Extent Practicable (MEP)

EPA has determined and the State of Virginia has concurred that the selected remedy represents the maximum extent to which permanent solutions and treatment technologies can be utilized in a practicable manner for the remedy for OU 2. The selected remedy was the only alternative that met the threshold criterion for Protection of Human Health and the Environment. Additionally, the selected remedy provides the best balance of tradeoffs with respect to the five primary balancing criteria.

The selected remedy meets the statutory requirement to utilize permanent solutions and treatment technologies, to the maximum extent practicable.

Preference for Treatment as a Principal Element

By utilizing chemical precipitation and solid separation as part of the wastewater treatment process for the contaminated surface water, the statutory preference for treatment as a principal element is met.

K. DOCUMENTATION OF SIGNIFICANT CHANGES

The Commonwealth of Virginia has concurred with the selected remedy. In addition, several written comments

were received from the public. Most of these comments focused on the property owner's tire operation and not the proposed action. Written comments are fully addressed in the Responsiveness Summary.

The Proposed Plan for OU 2 of the Rhinehart Site was released for public comment on August 14, 1992. The Plan identified Alternative 2 as the preferred alternative. Based upon the written comments received, it has been determined that no significant changes to the remedy are necessary.

APPENDIX A

Virginia Water Control Board Water Quality Effluent Standards

Discharge Criteria Effective 8/2/89

Parameter	Maximum Discharge Concentrations ug/l (ppb)
Aluminum	87
Arsenic	360
Copper	9.2
Iron	1,000
Lead	34
Nickel	1,100
Silver	0.12
Zinc	180
TSS	60,000
pH	6.5-9.5

RESPONSIVENESS SUMMARY

RHINEHART TIRE FIRE, OPERABLE UNIT 2
WINCHESTER, VIRGINIA

This Responsiveness Summary for Operable Unit 2 of the Rhinehart Tire Fire Site is divided into the following Sections:

- Section I Overview - A summary of the public's response to Alternatives for Operable Unit 2
- Section II Background Information On the Community's Involvement and Concerns - A discussion of the history of community interest in the Site.
- Section III A Summary of Comments Received During the Public Comment Period and Agency Responses to Those Comments and Questions. This summary addresses comments and EPA responses.

A. OVERVIEW

At the time of the public comment period, the Environmental Protection Agency (EPA) had identified its preferred remedial alternative for Operable Unit 2 of the Rhinehart Tire Fire Site (Site) in Winchester, Virginia. EPA's preferred remedial alternative, documented in the Proposed Remedial Action Plan (Proposed Plan), is clean closure of Dutchman's Pond to deal with the imminent threats of release to the environment.

The Proposed Plan provided a summary of the background information leading up to the public comment period. Specifically, the Plan included information pertaining to the history of the Rhinehart Tire Fire Site, the scope of the proposed cleanup action and its role in the overall site cleanup, a qualitative assessment of risk, the descriptions of the remedial alternative evaluated by EPA, the identification of EPA's preferred alternative, the rationale for EPA's preferred alternative, and the community's role in the remedy selection process.

All comments received by EPA during the public comment period were considered in EPA's selection of the preferred remedial alternative for Dutchman's Pond. The selected remedial action is clean closure of Dutchman's Pond as set forth in the Record of Decision. The Commonwealth of Virginia Department of Waste Management (VDWM) supported the preferred remedial alternative for Dutchman's Pond and concurs in the selected remedial action.

B. BACKGROUND ON COMMUNITY INVOLVEMENT

The Proposed Plan documenting EPA's preferred alternative for remediation of Dutchman's Pond at the Rhinehart Tire Fire Site was released to the public on August 15, 1992. The Plan and supporting documents were made available to the public in the administrative record file for the Site maintained at the EPA Region III Docket Room in Philadelphia, Pennsylvania, The Handley Library and Office of County Supervisors in Winchester, Virginia. The notice of availability of these documents and the beginning of the public comment period for the Proposed Plan were published in the Northern Virginia Daily and the Winchester Star on August 14, 1992. The public comment period extended from August 15, 1992 through September 14, 1992.

Because community interest in the Rhinehart Tire Fire Site had been limited in the past, EPA offered to conduct a public meeting if it were requested. Since EPA received no such request, a public meeting was not held.

Only three written comments were received on the Proposed Plan; however, none of these comments directly addressed the proposed remedial action. Nonetheless, responses to those comments received are provided in the following section.

C. RESPONSES TO WRITTEN COMMENTS

1. A comment was received from a concerned citizen questioning why Mr. Rhinehart should not be responsible for paying for the damage at the Rhinehart Tire Fire Site - as opposed to the taxpayers.

EPA Response: It should be noted that this comment does not pertain to the proposed remedial action for which EPA provided the public comment period as required by Section 117(a) of CERCLA, 42 U.S.C. S 9617(a). While EPA will not identify its enforcement confidential decisions on whether to pursue any particular potentially responsible party (PRP) for a certain site, we do offer the following general description of how decisions on enforcement actions are made.

PRPs under CERCLA include: 1) current owners and operators of the site; 2) owners and operators of the site at the time hazardous substances were disposed; 3) persons who arranged for disposal or treatment of hazardous substances sent to the site; and 4) persons who accept hazardous substances for transport to the site, and who selected the site for disposal. These categories are set forth in section 107 of CERCLA, 42 U.S.C. S 9607.

The United States evaluates all the factors necessary under Section 107(a) of CERCLA that the United States needs to prove to bring an action for recovery of costs, and then, in the exercise of its enforcement discretion, makes a decision on whether to pursue an action against a party. In addition, the United States needs to take into account the applicable statute of limitations (the period after which an action is barred) under Section 113(g) of CERCLA, 42 U.S.C. S 9613(g). The internal government discussions on whether to pursue a party under Section 107(a) of CERCLA are enforcement confidential and at a minimum, the deliberative process privilege and the attorney work-product and attorney-client privileges apply.

2. One comment received expressed concern over the spending of millions of dollars on a cleanup when tires are still being dumped at the Rhinehart Site.

EPA Response: The cleanup of Dutchman's Pond and the storage of tires on the Rhinehart property are separate issues addressed by different regulatory authorities. The proposed cleanup of Dutchman's Pond is being conducted pursuant to the authority provided by the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (CERCLA). CERCLA provides EPA response authorities to address the release or threat of a release of hazardous substances as defined by Section 101(14) of CERCLA, 42 U.S.C. S 9601(14), and pollutants or contaminants as defined by Section 101(33) of CERCLA, 42 U.S.C. S 9601(33). When the tires caught fire, an oily tar containing hazardous substances was released which triggered EPA's authority to conduct the necessary response actions.

Although tires are not considered a hazardous substance, pollutant or contaminant under CERCLA, they are considered Special Waste under the Virginia Solid Waste Management Regulations (VSWMR) (VR 672-20-10). The storage of tires is regulated by the Commonwealth of Virginia. The Commonwealth of Virginia has been actively pursuing compliance with the Commonwealth's regulations to prevent a recurrence of a major fire.

3. A comment was received indicating "the best thing to do is nothing. Next thing try shredding and use along back county roads..."

EPA Response: EPA's response addresses the first portion of the comment in terms of selecting the no action alternative for Dutchman's Pond. EPA believes the remainder of the comment implies how the tires onsite should be handled. That portion of the comment is not relevant to the proposed remedial action and is not addressed in the following response.

The goal of the remedy selection process is to select remedies that are protective of human health and the environment, that maintain protection over time, and that minimize untreated hazardous waste. To take no remedial action on Dutchman's Pond would not be protective of the environment and would be inconsistent with the goal of the Superfund remedial program. Closure of Dutchman's Pond is consistent with the intent of the Superfund program as well as protective of the environment.